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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN D. HOTTOVY,
DALE A. ZELLERS,
DONALD W. VERSER, and
DAVID H. BURNS

Appeal 2008-5794
Application 10/660,990
Technology Center 1700

Decided: December 29, 2008

Before CHARLES F. WARREN, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1-15 and 21-27. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The invention relates to the polymerization of olefin monomers in a liquid medium, particularly slurry polymerization in a large loop reactor (Spec. ¶ [00021]). Slurry polymerization is also referred to as particle form polymerization. This form of polymerization can be used to synthesize polyolefins such as polyethylene and polypropylene. Producing the polymer involves introducing feed materials such as monomer and catalyst into a loop reactor, polymerizing the monomer, and taking off a product slurry containing solid polyolefin particles in the liquid medium (Spec. ¶ [0003]).

Within the loop reactor, the concentration of the monomer tends to decrease as the monomer reacts. The concentration of the monomer within the reactor influences the properties of the polymer, and for this reason it is desirable to maintain the monomer concentration within acceptable ranges (Spec. ¶ [0006]). Appellants introduce the monomer through a plurality of monomer feeds “substantially symmetrically arranged around” (claim 1) or “arranged substantially symmetrically about” (claim 24) the loop reaction zone. Symmetrically arranging the feeds keeps variations in monomer concentration around the reactor loop quite low (Spec. ¶ [0008]). Claim 1 is illustrative:

1. A slurry polymerization process in which solid polyolefin particles are formed in a fluid slurry, the process comprising:

introducing an olefin monomer to a loop reaction zone through a plurality of monomer feeds, wherein the monomer feeds are substantially symmetrically arranged around the loop reaction zone;

introducing a catalyst to the loop reaction zone, the catalyst being capable of polymerizing the olefin monomer;

polymerizing the olefin monomer to form a fluid slurry containing solid polyolefin particles; and

withdrawing a portion of the fluid slurry as an intermediate product at a slurry withdrawal location in the loop reaction zone where the intermediate product contains a higher concentration of the solid polyolefin particles than an average concentration of the solid polyolefin particles [sic, in] the fluid slurry in the loop reaction zone.

The Examiner maintains, and the Appellants appeal, the following rejections:

- (A) the rejection of claims 5 and 8 as lacking enablement under 35 U.S.C. § 112, ¶ 1;
- (B) the rejection of claims 1-4, 6, 7, 9-15, and 21-27 under the judicially created doctrine of obviousness-type double patenting as unpatentable over:
 - (B1) claims 1-25 of Hottovy '235 (US 6,239,235 B1, issued May 29, 2001 to Hottovy et al.);
 - (B2) claims 1-19 of Hottovy '324 (US 6,806,324 B2, issued Oct. 19, 2004 to Hottovy et al.);
 - (B3) claims 1-9 of Franklin (US 6,743,869 B2, issued Jun 1, 2004 to Franklin, III et al.);
 - (B4) claims 1-13 of Verser (US 6,815,511 B2, issued Nov. 9, 2004 to Verser et al.);

- (C) the rejection of claims 1-4, 6, 7, 9-15, and 21-27 under 35 U.S.C. § 102(b) as anticipated by Hottovy '235; and
- (D) the rejection of claims 1-15 and 21-27 under 35 U.S.C. § 102(e) as anticipated by Kendrick (US 2002/0173598 A1, pub. Nov. 21, 2002 to Kendrick et al.).

II. ENABLEMENT

The Examiner rejects claims 5 and 8 as lacking enablement under 35 U.S.C. § 112, ¶ 1.

Claim 5 further limits the process of claim 1 to one “wherein a range of concentration of the olefin monomer within the loop reaction zone is 1.05% or smaller.”

Claim 8 further limits the process of claim 1 to one “wherein the fluid slurry has a plurality of monomer concentrations around the loop reaction zone, and the standard deviation of the plurality of monomer concentrations is equal to or less than 0.4%.”

The rationale of the rejection is difficult to determine. The sole reason stated in the grounds of rejection is that “[t]he base of the percentage of the monomer is not defined.” (Ans. 4.) But this apparently does not refer to the base *units* of the percentage. In response to Appellants’ contention that Examples 1 and 2 (Spec. ¶¶ [0036-37]) provide enablement because these Examples show how to calculate the percentages (Br. 14-15), the Examiner asserts that “[w]hile Examples I and II [sic, Examples 1 and 2] provide support for the unit of the monomer concentration, Examples I and II [sic, Examples 1 and 2] also show that the monomer concentration in the

loop reaction ranging [sic] from 3.32 to 4.93 wt% which is much higher than the 1.05% and 0.4% of claims 5 and 8 respectively. . . . Therefore, claims 5 and 8 as written is [sic] not enabled because the range of concentrations of 1.05% or smaller and 0.4% or smaller are too small to practically conduct olefin polymerization in the loop reactor in industry.” (Ans. 9.)

Appellants reply that claim 5 expresses the *swing* in monomer concentration as an absolute difference in percentage and the numerical value of Example 1 is captured within claim 5, i.e., the value is 0.66% (from 4.27% to 4.93%) (Reply Br. 4). To this the Examiner responds that “[i]f the limitation of the range of monomer (ethylene) concentration is intended to mean the range variation of monomer concentration, appropriate amendments to the claims are requested.” (Ans. 9.)

The issue is: has the Examiner advanced acceptable reasoning inconsistent with enablement?

In regard to enablement under 35 U.S.C. § 112, ¶ 1, a threshold issue is whether the Examiner has met the burden of proof in calling into question the enablement of an appellant's disclosure. This burden requires that the examiner advance acceptable reasoning inconsistent with enablement. Thereupon, the burden would shift to appellant to show that one of ordinary skill in the art could have practiced the claimed invention without undue experimentation. *In re Strahilevitz*, 668 F.2d 1229, 1232 (Fed. Cir. 1982).

Where the Examiner is calling into question statements in the supporting disclosure of the Specification, the Examiner must present sufficient reasons or evidence to doubt the truth or accuracy of those statements. *See In re Marzocchi*, 439 F.2d 220, 224 (CCPA 1971).

Moreover, an inventor need not include in the specification that which is already known and available to one of ordinary skill in the art. *See In re Howarth*, 654 F.2d 103, 105 (CCPA 1981) (“An inventor need not, however, explain every detail since he is speaking to those skilled in the art.”)

Claims 5 and 8 are directed to a range of concentration or a standard deviation. The Specification at paragraph [0008] specifically states that

The olefin monomer is introduced so that the concentration of the olefin monomer within the loop reaction zone is within a desired range. For example, by introducing the olefin monomer at multiple symmetrically-arranged feed locations, the olefin monomer concentration in a liquid diluent in the reactor may be held within a range of 1.05% or a smaller range. The variation of olefin monomer concentration around the reactor may be kept quite low, so that the standard deviation of the olefin monomer concentrations around the reactor is 0.4% or less.

(Spec. ¶ [0008].)

Turning first to claim 8, that claim specifically refers to a standard deviation of concentrations, i.e., a statistical measure of variation around a mean value. The Specification specifically discloses that the process achieves standard deviations within the claimed range of equal to or less than 0.4%. The Examiner offers no reason to doubt the accuracy of this statement.

Turning to claim 5, the claim refers to “a *range* of concentration ... 1.05% or smaller” (emphasis added). It does not purport to claim a monomer concentration, but a range or difference in concentrations. The Specification discloses holding the concentration “within a range of 1.05% or a smaller range.” [Spec. ¶[0008]. The Specification makes clear that the goal is to keep concentration at a uniform level around all points of the

reactor and to minimize concentration differences. Claim 5 reflects the small range of concentration difference recited in the Specification at paragraph [0008] and the Examiner has not presented sufficient reasons or evidence to doubt the truth or accuracy of the statements of paragraph [0008]. *Marzocchi*, 439 F.2d at 224.

The Examiner has not advanced acceptable reasoning inconsistent with enablement. We, therefore, do not sustain the rejection of claims 5 and 8 under 35 U.S.C. § 112, ¶ 1.

III. ANTICIPATION BY HOTTOVY ‘235

Turning to the rejection of claims 1-4, 6, 7, 9-15, and 21-27 as anticipated by Hottovy ‘235, the issue is: has the Examiner established that Hottovy ‘235 describes, within the meaning of 35 U.S.C. § 102, monomer feeds “substantially symmetrically arranged around the loop reaction zone” as required by claim 1 or “arranged substantially symmetrically about the loop reactor” as required by claim 24?

We answer this question in the negative.

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Moreover, the reference must identify something within the limitations of the claim with sufficient specificity to constitute a description thereof within the purview of § 102. *In re Schaumann*, 572 F.2d 312, 317 (CCPA 1978). In other words, it “must describe the claimed invention with sufficient precision and detail to establish that the subject matter existed in the prior art.” *Verve LLC v.*

Crane Cams Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002). A genus including an untold number of undisclosed species does not anticipate a claimed species. *In re Meyer*, 599 F.2d 1026, 1032 (CCPA 1979).

The Examiner acknowledges that Hottovy '235 fails to explicitly describe a plurality of monomer feeds that are arranged substantially symmetrically around or about the loop reactor (Ans. 4). However, the Examiner asserts that column 4, lines 7-11 of the reference discloses introducing monomer at a plurality of locations and all arrangements of the feeds would have some sort of symmetry (Ans. 5).

Hottovy '235 states that “[m]onomer, comonomer, if any, and make up diluent are introduced via lines **26** and **28** respectively which can enter the reactor directly at one or *a plurality of locations* or can combine with condensed diluent recycle line **30** as shown.” (Hottovy '235, col. 4, ll. 8-12 (emphasis added)). However, Hottovy '235 does not describe anything about the location of the multiple feeds.

We cannot agree with the Examiner that Hottovy's very limited suggestion of using multiple feeds is sufficiently specific to anticipate the claims. The claims require a specific arrangement “around the loop reaction zone” (claim 1) or “about the loop reactor” (claim 24). That arrangement is a “substantially symmetrical” arrangement in reference to locations “about” or “around” the loop reactor. The plural feed lines of Hottovy '235 could be placed anywhere on the loop of the loop reactor. The loop of Hottovy '235 is a complicated structure of horizontal and vertical segments separated by bends. Contrary to the finding of the Examiner, not all possible locations of

the feeds would be “substantially symmetrical around” or “substantially symmetrically about” the loop as claimed.

Additionally, the Examiner further finds that one would immediately anticipate four symmetrical monomer feeds symmetrically arranged relative to four take off locations (Ans. 11-12). But there is no specific description of four take off appendages much less any description of four symmetrically arranged feeds. Again, the description of Hottovy ‘235 is not sufficiently specific to support an anticipation rejection.

The Examiner also looks to the Data Table in column 7 and Examples of Hottovy ‘235 and finds that “[t]here must be multiple feeds for monomers and catalyst around the rather long loop reactor [of Hottovy ‘235] at the regular intervals to compensate the monomer being consumed for the formation of the olefin polymer product and the catalyst unavoidable deactivated in the polymerization media.” (Ans. 5-6.) But the reference does not support the Examiner’s characterization of the data, nor is the data extensive enough to support the Examiner’s finding of inherency (Ans. 12). The Table contains only one concentration measurement, presumably for just one location, for each of three operations, the operations essentially differing by pump size and use of continuous take off. The data does not indicate that there are multiple feeds. Moreover, Hottovy ‘235 specifically illustrates a system with one monomer feed (Fig. 1 at recycle line 30).

The Examiner has not established that Hottovy ‘235 describes, within the meaning of 35 U.S.C. § 102, monomer feeds “substantially arranged around the loop reaction zone” as required by claim 1 or “arranged substantially symmetrically about the loop reactor” as required by claim 24.

We, therefore, do not sustain the 35 U.S.C. § 102(b) rejection over Hottovy ‘235.

IV. OBVIOUSNESS-TYPE DOUBLE PATENTING

The Examiner rejects claims 1-4, 6, 7, 9-15, and 21-27 under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims of a number of different patents (Hottovy ‘235, Hottovy ‘324, Franklin, and Verser). According to the Examiner, the conflicting claims are not patentably distinct because the subject matter of Appellants’ claims is an obvious variation of the patented claims. The Examiner refers to the anticipation rejection over Hottovy ‘235 “for detailed analysis.” (Ans. 3.)

The issue is: has the Examiner established that the subject matter of the rejected claims is an obvious variation of what is claimed in the patents?

To prevent extension of the patent right beyond statutory limits, the doctrine of obviousness-type double patenting applies to claimed subject matter different, but not patentably distinct from, the subject matter claimed in a prior patent. *In re Goodman*, 11 F.3d 1046, 1052 (Fed. Cir. 1993). Where the pending claim is an obvious variation of the claims of the prior patent, the pending claim is not patentably distinct. *In re Vogel*, 422 F.2d 438, 441 (CCPA 1970).

To show that a claimed invention is “a mere variation ... which would have been obvious to those of ordinary skill in the relevant art ... there must be some clear evidence to establish why the variation would have been obvious which can properly qualify as ‘prior art.’” *In re Kaplan*, 789 F.2d

1574, 1580 (Fed. Cir. 1986). In a double patenting rejection, the prior patent is not applied as “qualifying prior art”, and therefore, the patented disclosure may not be used as prior art. *Id.*; *Vogel*, 422 F.2d at 441. The patent disclosure may be used only in certain limited circumstances, such as for clarifying the patented claims’ scope, by referring to tangible embodiments of the patented claims that are disclosed in the specification. *Id.* at 442. Nonetheless, “only the disclosure of the invention claimed in the patent may be examined.” *Id.*

There is no dispute here that none of the prior patents applied by the Examiner contain claims including a step of introducing the monomer through feeds “substantially symmetrically arranged around the loop reaction zone” as required by claim 1 or “arranged substantially symmetrically about the loop reactor” as required by claim 24 (Ans. 7-8).

The Examiner discusses only the applied patent Hottovy ‘235. The Examiner states that “feeding monomer to the loop reaction zone is a required step for conducting polymerization in the loop reactor.” Therefore, the portion of the specification [of Hottovy ‘235] describing the monomer feeding supports the patent claims and may be considered.” (Ans. 8.) The Examiner fails to provide any evidence, other than the disclosure of the prior patent to Hottovy ‘235, that what is now claimed is an obvious variation of what is claimed in the prior patents.

None of the claims of Hottovy ‘235 or any of the other applied prior art patents recite a step of introducing the monomer through a plurality of feeds much less recite introducing monomer through feed symmetrically arranged around or about the loop reactor. Nor is the disclosure of monomer

feeds needed to support the subject matter of the claims of the prior patents. To consider disclosures within the patent relating to monomer feeds amounts to using the patent as prior art.

V. ANTICIPATION BY KENDRICK

Turning to the 35 U.S.C. §102(e) rejection over Kendrick, Appellants contend that they have overcome this rejection by establishing an earlier date of invention as shown in the Verser Declaration under 37 C.F.R. § 1.131 (Br. 21). The Examiner contends that the claims of Kendrick are directed to the same invention as Appellants' claims, and as such, the reference can only be overcome by establishing priority of invention through interference proceedings (Ans. 13). According to the Examiner, because the Examiner maintained other rejections in the Answer, it was not yet appropriate to initiate an interference (Ans. 13). Appellants contend that it is the Examiner's responsibility to initiate the interference, not Appellants' (Br. 22).

Declarations under 37 C.F.R. § 1.131 are ordinarily effective for overcoming rejections under 35 U.S.C. § 102(e). However, Rule 131 expressly states that "[p]rior invention may not be established under this section if ... [t]he rejection is based upon a U.S. patent or U.S. patent application publication of a pending or patented application to another or others which claims the same patentable invention." Rule 131 states that in such a situation "an applicant may suggest an interference pursuant to § 41.202(a) of this title."

An interference is a contest under 35 U.S.C. § 135(a) declared to determine priority of invention under 35 U.S.C. § 102(g)(1). A suggestion for an interference may come from either an applicant or an examiner. 37 C.F.R. § 41.202; MPEP § 2304. However, apart from the question of priority, examination must be completed, and at least one interfering claim must be patentable, unless otherwise authorized by the Board. 37 C.F.R. §§ 41.102 and 41.202(c).

Appellants do not dispute the Examiner's finding that the pending claims and Kendrick's claims are directed to the "same invention." (Br. 21-22). Under the circumstances, the Verser Declaration cannot be used to overcome the 35 U.S.C. § 102(e) rejection over Kendrick. The matter must be settled by way of interference proceedings, but it was appropriate for the Examiner to refuse to provoke an interference at the time of the Answer. At the time of the Answer, there were other outstanding rejections.

As Appellants have not shown that the Examiner reversibly erred, we sustain the 35 U.S.C. § 102(e) rejection over Kendrick.

VI. CONCLUSION

We do not sustain the following rejections of the Examiner:

- (A) the rejection of claims 5 and 8 as lacking enablement under 35 U.S.C. § 112, ¶ 1;
- (B) the rejection of claims 1-4, 6, 7, 9-15, and 21-27 under the judicially created doctrine of obviousness-type double patenting as unpatentable over:
 - (B1) claims 1-25 of Hottovy '235;
 - (B2) claims 1-19 of Hottovy '324;

- (B3) claims 1-9 of Franklin;
- (B4) claims 1-13 of Verser; and
- (C) the rejection of claims 1-4, 6, 7, 9-15, and 21-27 under 35 U.S.C. § 102(b) as anticipated by Hottovy '235.

We sustain the following rejection:

- (D) the rejection of claims 1-15 and 21-27 under 35 U.S.C. § 102(e) as anticipated by Kendrick.

VII. DECISION

The decision of the Examiner is affirmed.

VIII. TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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